Art Unit: 1764

## **Detailed Action**

## Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance: the closest prior art, US 6,808,689 to Matsumoto et al teaches tube and shell reactor as claimed but employs a heat transfer material wholly as a liquid phase. It would not have been obvious to one of ordinary skill to have modified the tube and shell reactor in such a way that the heat transfer material is a liquid phase and vapor phase. It would additionally, not have been obvious to have employed heat pipes as claimed with Matsumoto et al's reactor.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Glenn Caldarola Supervisory Patent Examiner Technology Center 1700